The Role of EPA in Columbia River Restoration
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Physical and Historical Setting - The Columbia River Basin collects water from hundreds of mountain streams feeding into four major tributaries, - the Snake, the Kootenai, the Clark Fork-Pend Oreille and the Willamette Rivers. These feed into the 1,214 miles long mainstem of the Columbia River, the second largest river in the U.S., which eventually empties into the Pacific Ocean near Astoria, Oregon. Covering 219,000 square miles in seven western states - Washington, Oregon, Idaho, Montana, Wyoming, Nevada and Utah - the basin also takes in 39,500 square miles in British Columbia. At one time, the Columbia River had the largest salmon runs in the world[1] and historical evidence, dating back 10,000 years, shows that indigenous people had a sustained and rich culture as a result of the presence of the salmon. The annual catch of the Columbia Basin Indians in the 19th century has been estimated to be 5 to 6 million fish. The Columbia Basin Tribes also have a strong spiritual and religious connection with salmon.

Environmental Degradation in the Columbia River Basin - The decline of fish runs in the Columbia River Basin have resulted from150 years of development, including hydropower development, hatchery production, fish harvest, water quality degradation and habitat loss across the basin. As a result, twelve stocks of fish in the Columbia River basin that are directly and/or indirectly impacted by the Federal Columbia River Power System (FCRPS) are now listed as threatened or endangered under the Endangered Species Act (ESA). There are current exceedances of Clean Water Act (CWA) water quality standards, including Total Dissolved Gas [TDG] and temperature, that impact fish survival and overall beneficial uses in the Columbia and Snake River mainstem. The water quality standards for the Columbia River are based on minimum biological requirements for fish migration and spawning.

[1] The Northwest Power Planning Council estimates the annual salmon runs in the Columbia in the early nineteenth century to ranged from 11 - 16 million salmon. Approximately 2 million now return to the Columbia and approximately 90% of those are from Columbia River hatcheries.

The Columbia River as a Power Source - The hydroelectric dams on the Columbia and Snake Rivers produce an average of 18,500 megawatts of electricity annually and are the foundation of the Northwest's power supply. There are thirty four dams on the Columbia and Snake River, fourteen are federal multi-use projects[2] which serve as the Federal Columbia River Power System (FCRPS). These projects also provide navigation, irrigation, flood control and recreation. The Bonneville Power Administration markets and distributes power to public and private utilities generated at the federal dams on the Columbia River and its tributaries. The U.S. entered into the Columbia River Treaty with Canada in 1964 to provide for the building of four storage reservoirs (three in Canada, and one in the U.S.). These reservoirs represent almost half of the water storage on the Columbia River system used for flood control and power generation.

2000 Biological Opinion - In 2000, the National Marine Fisheries Service (NMFS) issued a Biological Opinion on the Endangered Species Act listings of Columbia and Snake River salmon. The Biological Opinion identified reasonable and prudent alternatives for the "federal action agencies" (U.S. Army Corps of Engineers (Corps), Bureau of Reclamation and Bonneville Power Administration) to avoid jeopardy from the FCRPS on endangered or threatened species and identified an aggressive restoration strategy in lieu of near-term dam breaching. Dam breaching may be revisited as a result of fish recovery performance measure attainment. The background for restoration actions is complex and contentious involving four states, thirteen tribes, Alaska fishing controversies, and Canada, on issues such as governance, energy deregulation, tribal harvest, hatcheries, habitat, and hydropower. At the same time, the U.S. Fish and Wildlife Service also issued a Biological Opinion on impacts to ESA listed resident fish from the FCRPS.

EPA's Role - The U.S. Environmental Protection Agency (EPA) has been participating in Columbia River forums to promote the inclusion of CWA in the ESA decisions on the Columbia River mainstem for both federal and non-federal dams. EPA recognizes that restoration of the Columbia River requires an ecosystem approach and there are critical water quality improvement efforts that must be done in both the tributaries and the mainstem to achieve species recovery. In addition, EPA, states and tribes are engaged in major efforts in the tributaries through Total Maximum Daily Loads (TMDLs) and other stream restoration efforts.

- **Columbia/Snake Mainstem TMDL** - EPA, and the states of Oregon, Washington, and Idaho in coordination with the Columbia River Tribes have initiated dissolved gas and temperature TMDLs for the Columbia/Snake Mainstem. The purpose of the Columbia/Snake River Mainstem TMDLs is to understand the sources of total dissolved gas and temperature loadings and to allocate those loadings to meet state and tribal water quality standards. This is a task that will require careful coordination, cooperation, and management by all parties involved in

[2] The U.S. Army Corps of Engineers operates 12 of the 14 major FCRPS projects. The Bureau of Reclamation operates 2 (Grand Coulee and Hungry Horse) of the 14 projects.

this effort due to the complexity of the governance system involving Federal agencies, state agencies, Tribes, private entities, and Public Utility Districts. EPA is taking the lead on the technical development of the Temperature TMDL and the states are taking the lead on the development of the dissolved gas TMDL. EPA is the lead for tribal lands and also public outreach for both TMDLs. EPA and the states have developed a Memorandum of Agreement to define roles and responsibilities in the development of the TMDLs.

- **2000 Biological Opinion** - In December 2000, NMFS released the Biological Opinion on the FCRPS, which includes long term water quality goals to attain state and tribal water quality standards for temperature and total dissolved gas. The Biological Opinion calls for a water quality plan in which the federal action agencies will lay out their approach for moving toward attainment of water quality standards in the Columbia/Snake River Mainstem.

- **Conservation of Columbia Basin Fish Salmon Recovery Strategy** - EPA participated with eight other federal agencies in the development of the Conservation of Columbia Basin Fish Salmon Recovery Strategy, a conceptual document that explores alternative actions needed to recover ESA-listed species in the basin, organized around the factors that effect the life-cycle of salmon. CWA attainment is a key item in both the hydro and habitat discussions. The habitat portion of the paper encourages increased coordination between tributary TMDL efforts and ESA actions.

- **Lower Snake Draft Environmental Impact Statement** - EPA Region 10 gave a EU-3 (inadequate) rating to the Corps Lower Snake River Juvenile Salmon Migration Draft Feasibility Report and EIS on the four Lower Snake River Dams. In general, EPA criticized the DEIS for failing to acknowledge the impacts that the dams have on water quality and inclusion of the cost of clean water into the cost benefit analysis. EPA is working with the Corps to address these concerns in the Final EIS.

- **Snake River Lawsuit** - In 1999, environmental groups (National Wildlife Federation and others) sued the Corps in Federal District Court in Oregon over operation of four Lower Snake River federal dams, asserting that they cause exceedances of water quality standards. Specific challenge was to the Corps decisions regarding dam operations. The court granted the plaintiffs summary judgement motion on 2/16/01 and ruled:
  - Record established “it was a clear error of judgment by the Corps not to address compliance with its legal obligations under the Clean Water Act.”
  - The Corps’ decisions were arbitrary and capricious because, in an apparent reference to water quality problems caused by the dams, the “record does not establish that the Corps considered all relevant factors . . . and does not support the agency action.”
  - Corps must submit new Record of Decision (ROD) by 4/17 (extended to 5/17) to address water quality impacts

  EPA expects ROD to tie into TMDL process as part of Corps water quality standards efforts.

EPA expects to work with Corps on ROD development.

- **Transboundary Gas Group** - EPA is working with a bi-national group called the Transboundary Gas Group (TGG) whose purpose is to reduce system wide TDG to levels safe for aquatic life in the most cost effective manner possible. The TGG released its "Framework Plan for Coordinating Activities of the Columbia River Transboundary Gas Group" on August 17, 2000.

Key Issues for EPA

- **Columbia/Snake River Mainstem TMDL** - EPA's participation in the Columbia/Snake River Mainstem TMDL is critical given the complexity presented by the ESA listings and the Federal Columbia River Power System, and the complex political arena for solving these problems with four states and thirteen tribal governments. The states and tribes have requested EPA's leadership and involvement in Columbia River problem resolution.

- **Record of Decision/Water Quality Plan** - EPA's concurrence with a water quality improvement strategy for the Columbia and Snake River mainstem developed by the Corps is critical. This will require coordination with the Corps and DOJ.

- **Coordination with Tribal Governments** - The Columbia River Tribes approached EPA and asked for our participation to uphold our CWA tribal trust responsibility. Appropriate coordination and consultation with tribal governments will be necessary.

- **Implementation of the NMFS Biological Opinion** - EPA will need to work with NMFS and the other federal agencies to ensure effective implementation of the water quality related Reasonable and Prudent Alternatives and Conservation Measures identified in the Biological Opinion.

- **2001 Power Emergency** - EPA has been engaged in the recent decisions surrounding the west coast power emergency. We are modeling flow scenarios to understand the short term water quality implications of decisions surrounding the power emergency and critical low flows. Over the long term, the water quality strategy is not expected to have a major impact on power supply. Power capacity could actually be increased by improved operational decisions. Many of the proposals in the strategy are study proposals that would enable full disclosure of environmental benefit and associated costs for future decisions and agreements.

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